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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,162	01/20/2004	Carol Ann Huber	20-330	6655

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EXAMINER

CHANG, DANIEL D

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,162

Applicant(s)

HUBER ET AL.

Examiner

Daniel D. Chang

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-8, 10-17, 19-23 and 25 is/are rejected.
- 7) ☒ Claim(s) 3, 9, 18 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Drawings

The drawings are objected to because lines, numbers, and letters are not uniformly thick and well defined, clean, durable, and black (poor line quality) and there are illegible marks in figures 1 - 7. Correction is required.

Claim Objections

Claims 2 and 21-23 are objected to because of the following informalities:

Claim 2, on last line, "said ground" appears to be --said PAD-- (see Fig. 4; spec. P. 8, line 22+).

Claims 21-23, line 3, the recitation, "a power supply voltage" appears to be --said power supply voltage--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. On line 5, the recitation, "said series connection" lacks antecedent basis.

Claim 20 is also rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a

gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: means for inverting and other means.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 6-8, 10, 12, 13-17, 19-23, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Prodanov (US 6,693,469 B2).

Regarding claim 1, Prodanov discloses, at least in Fig. 3E, a low voltage, 5V tolerant buffer, comprising:

a series connection of at least three transistors (N1-N3), a terminal of an upper transistor in said series connection being connected to a PAD (102), and a terminal of a lower transistor of said series connection being connected to ground (V_{ground}); and

a bias generator (circuit on the left side of Fig. 3E), an output of said bias generator being connected to a gate of said upper transistor (N3);

wherein a gate of a central one (N2) of said series connection of three transistors is adapted to be connected to a power supply (V_{max}) of no greater than 2.5V nominal (since V_{max} is 1/3 of 3V_{max}; see col. 1, lines 23+).

Regarding claim 2, Prodanov discloses, at least in Fig. 3E, that said bias generator comprises: a series connection of two p-channel field effect transistors (P4 and P6 are series connected);

said series connection of said two transistors being connected between said power supply (Vmax) and said PAD (102).

Regarding claim 4, Prodanov discloses, at least in Fig. 3E, that said upper transistor, said lower transistor, and said central transistor are each an n-channel field effect transistor (N1-N3).

Regarding claims 6-8, as for the recitation, “SCSI bus”, “PCI bus”, and “PCMCIA bus”, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

Regarding claim 10, Prodanov discloses, at least in Fig. 3E, an integrated circuit (col. 1, lines 10+) including said 5V tolerant buffer.

Regarding claim 12, Prodanov discloses, at least in Fig. 3E, that said series connection of at least three transistors is a series connection of a current path of each of said at least three transistors (N3-N1).

Regarding claim 13, Prodanov discloses, at least in Fig. 3E, that each of said at least three transistors are a field effect transistor (N3-N1; col. 1, lines 32+).

Method claims 14-17 and 19; and apparatus claims 20-23 and 25 are essentially the same in scope as apparatus claims 1, 2, 4, 6, and 12 and are rejected similarly.

Art Unit: 2819

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prodanov.

As applied previously, Prodanov teaches all the features of the claimed invention, with the exception of teaching the claimed “16 milliamps of current” and “at least 400 um” of channel width (Prodanov teaches 370 um).

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the channel width of at least one of said at least three transistors to at least 400 um and to have the said buffer reliably sink no more than about 16 milliamps of current, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

Claims 3, 9, 18, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

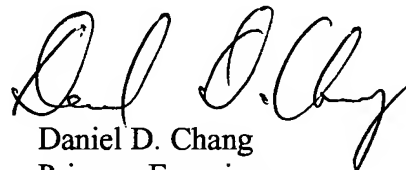
Kim (US 6,724,226 B2) discloses signal transmission circuit capable of tolerating high-voltage input signal.

Chen (US 6,236,236 B1) discloses 2.5 volt input/output buffer circuit tolerant to 3.3 and 5 volts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Chang whose telephone number is (571) 272-1801. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Tokar can be reached on (571) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel D. Chang
Primary Examiner
Art Unit 2819

DANIEL CHANG
PRIMARY EXAMINER